

DSTLEQT001

500L Vodka Still

Operature manual



Catalogue

| | |
|----------------------------|-----|
| Application..... | 3 |
| Working principle..... | 5 |
| Operation..... | 6 |
| Maintain of equipment..... | 10 |
| Guarantee..... | .11 |

I. Application:

The equipment structure and characteristic: structure as follow



1. Pot 2.Helmet 3. Lyne arm 4. 8 plates column 5.Dephlegmator 6. 6 plates column 7. Dephlegmator 8. Condenser 9. Parrot 10. Alcohol collecting tank 9. CIP pipe 10. Steam pipe

This style can make Gin, Whisky, Brandy, Rum, Vodka and so on.

Installation:

1. clean the ground you want to set the equipment, and prepare fork lifter;
2. Use fork lifter to get all equipment out contain.
3. put the pot in place you want, and then adjust leg if the ground is unflat;
4. put frame support and alcohol collecting tank beside pot, connect. Adjust legs, if ground is unflat.
5. Put helmet in pot, then connect it with lyne arm.
6. Set 8 plates column in frame support and lock it with screws.
7. Set 6 plates column in frame support and lock it with screws.
8. Set condenser in frame support and lock with screws.
9. Separate all pipes into steam pipe & CIP pipe. All steam pipe marks NUMBERS, all CIP pipes marks LETTERS.
10. Connect **pipe 2** with lyne arm;
11. Connect **pipe 3** with the bottom of 8 plates column, then this two pipe with 3 way pneumatic valve;
12. Connect **pipe 4** with 3 way pneumatic valve's right way.
13. Connect **pipe 4** with 2 way pneumatic valve, then connect **pipe 5** with it and the top of 8 plates column.
14. Connect **pipe 6** with bottom of 6 plates column, connect **pipe 4 & 6** with 3 way pneumatic valve.
15. Connet **pipe 7** with 3 way pneumatic valve.
16. Connect **pipe 8** on condenser.
17. Connect **pipe 9, pipe 10 between pot and 2 column**. This two pipe is reflux pipe. The valve in here is 51mm hand valve.
18. Connect **pipe 11**(parrot) with condenser. Then connect pipe 12, 3 way valve
19. Connect CIP pipe to manifold pipe I, left to right is : A, B, C, D, E, F, G, H
20. Set the pump in right place, then connect the pump's outlet with pipe J (manifold CIP pipe).
21. Connect pot's drain with ball valve, then pipe K.

PS. The reducer has been set in pot.

The dephlegmator have been set on column already.

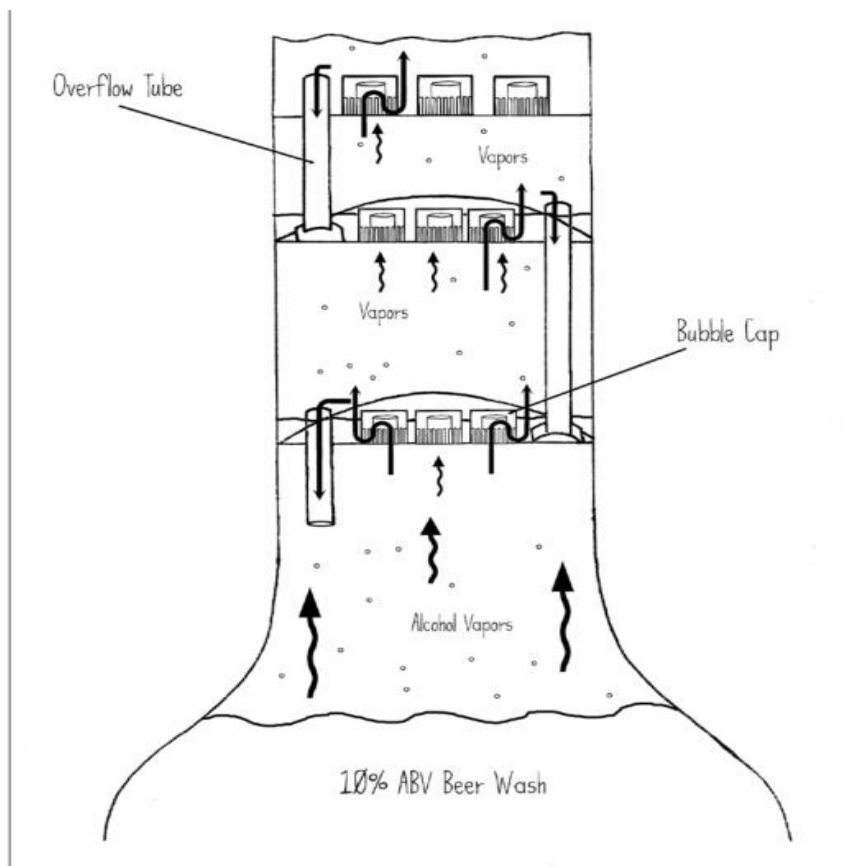
Details could see installation of pipe. pdf

II. Working principle:

After ferment the scharify material, called mature fermenter production with certainly alcohol content. This is according to different volatility of ingredient, then a few mixture will turn to steam and cooling down, so that to realize the separation of components.

The principle use to separation of two component mixture as example: heating the material to make it part of vaporization, the volatile part will densify of steam, the difficult volatilize part also will densify of liquid, so this realized separation of two-component to a certain extent. The greater difference of two component volatile ability, the greater is the densification.

Make partial vaporization of liquid phase direct contact with part of condensate gas phase, to proceed transfer liquid phase with gas phase in each other, so the difficult volatile component of gas phase will turn to liquid phase, the easy volatile component of liquid will turn to gas phase, in the meanwhile to make partial vaporiation and partial condenser of gas phase.



III. Operation:

Prepare working:

1. Cleaning parts:

Before first batch production, the still should be cleaned completely. Otherwise, the spirit will have bitter taste and other flavours of first several batches. The parts which need cleaning including: inside of still pot, helmet, first column, second column, steam pipe, dephlegmator, condenser and parrot.

2. Cleaning methods:

2.1 The equipment is welding and then add oxide film layer, so in the first time, it's better to mix the water and white vinegar in the still pot and heating twice.

Partially fill boiler with water ensure that the bottom is well covered. In a Keg boiler half full works well. Add 10-20l white vinegar to the water in the boiler. Set the product condenser to a high flow. Set the dephlegmator to medium flow. Close the parrot drain. Put the 1st collection jar under the parrot output spout. Ensure work area is clean, free of hazards and your fire extinguisher is easily reached. Turn on your element or burner. Adjust it to maximum output. Once "product" start coming out, you will observe there is likely an oily film on the surface and a vinegar smell. This is normal. Collect in one jar. Continue to collect for 20-30 minutes. Shutdown and clean up. Discard all collected "product"

2.2 Second way to wash.

Firstly, use water to wash. Then, add detergent to scrub and take water to wash several times. Inside of steam pipe, dephlegmator, condenser and so on, the parts that can not be scrubed should use water to swash 2-3 times. The inside of dephlegmator and condenser can be use CIP pipe to wash every part 2-3 times.

2.3 Another way to wash.

Put a 3% caustic soda (sodium hydroxide) solution in the still and recirculate it for 20

or 30 minutes using the CIP. Make sure to rinse every part of the still using the CIP valves. After that, drain the caustic solution out and rinse everything out with water to get rid of the residual caustic. Then put a 2% solution of citric acid (lemon acid) in the still and recirculate it for 20 or 30 minutes using the CIP. After that, drain and then rinse with water the same as with the caustic.

To make a 3% caustic solution, just put 3kg of caustic soda in 100L of water. For a 2% citric acid solution just put 2kg of citric in 100L of water.

For a 1000L still you only need to make up about 50L to 100L of solution,. You do not need to fill the still to capacity with solution. Just as long as there is enough for the CIP pump to pump it around the whole still and still have some in the kettle.

3. Cleaning frequency:

Every half year, or stop production for a time, the full set of still should be cleaned completely as above requirements.

Equipment need to use CIP to wash after every batch of production. Use hot water to flush whole equipment via CIP pump & pipe.

When using CIP pump, please make sure the breath valve on pot is open.

Prevent sucking back cause the pot damaging.

4. Outface clean:

Use dry cloth to wipe copper part to keep it shining.

Use rust remover / kitchen cleaner & cloth to wash SUS304 part to keep it shining.

Preparation for distiling:

The equipment running will need as follow conditions:

1. Finished installation, all device, tube and instrument are meet requirement after checked.
2. Confirmation all tube is connect well without reveal, all valves opening, outlet is

complete closed.

3. Confirmation safety device is flexible, hygiene meets the required.
4. Conformation water supply(water production, cold water), electricity supply, steam supply is fine.

Working:

1. add material: pull the mature ferment material into still pot. And check once about the every part instrument is connect well.
2. calculate the alcohol content of mature ferment liquid.
3. open the cold water pipe, supply water for dephlegmator and condenser, change the flow , you can turn to maximum flow. How large flow do you need ?
Judgement: if the parrot do not have spirit come out, the flow is ok.
4. heating: open the steam valve or electricity element power source, start heating (make sure dephlegmator and condenser cooler have cold water supply). When start to heating, you can see the liquid will gradually little boiling in the tank, the steam is go up, and temperature is rising to 78-85°C. Until the raw material in pot is completely boiling, check the parrot(drinking outlet) situtaion: if it has liquid come out, please turn up cold water flow or reduce heating source supply. Check the temperature gauge of column, making sure it is gradually rising until the temperature don't increase any more. Then the drop and steam temperature almost get equilibrium between gas and liquid. This temperature show in thermometer is the boiling point of liquid (distillate). Then we will need to turn down cold water flow of dephlegmator, let the steam pass dephlegmator and come into condenser cooler. Please make sure you have put collecting tank below parrot and ready to cut the head, heart and tail of spirits in respectively.
5. collect spirits: according to experience of winemaker to get the head, heart and tail collect. Or cut first 1% as head.
6. When the alcoholic meter drops fastly, it means this batch is almost finished.

Calculated the alcohol you collect and compare the alcohol content with the calculation you do before distilling. If this two figure is almost the same, make sure this batch is finished. Then stop heating. When the equipment cooling down, and without steam (if the water of sight glass don't moving), then stop transfer cooling water to dephlegmator and condenser.

7. Transfer the head and tails to next batch material if you want.

IV. Maintain of distillation

1. Before open distillation column, please check it entirely. Confirm all sight glass is totally closed, the valves in right position, others is all right;
2. Regularly clean bubble cap plates' scarring, make sure it do not have dead corner, preventing from blocking up of column;
3. Check manhole, make sure the connect part of flange do not reaval.
4. Check distillation column frequently, whether it has big shocks. If yes, please find out reason and contact us to get solutaion;
5. Keep outsurface clean and insulation layer is in good condition.
6. Regularly use buffing oil to scrub surface of copper, keep mirror effect.

Heat-exchange (dephlegmator & condenser)

1. Check dephlegmator and condenser from time to time: if temperature or pressure of water inlet / outlet has unnormal change, should find reason and solve it ASAP.
2. Check every component's change. If find any reveal, plug up the pipe in time and take new pipe.
3. Check heat exchanger in time. If it is out of shape, please inform us to get solution.
4. Get rid of non-condensable gas and condensate in time, clean heat exchangers' scarring, improving heat transfer efficiency.
5. If flange connect part and valve have reveal, change seals to preventing reveal. If reveals still exsit, please inform us.
6. In distilling process, should not use sudden huge power in valve. Otherwise, easy to make the shell of pot or pipe change shape.

V. Guarantee

Prettech Canada offer the following Guarantees:

1. 18months waranty:

If your motor is broken (Damages is not caused by misuse or vandalism), or any part is leak like the seals, we will send you new one for free.

If there is any other problem with the still, can send us photos or videoes to get change of new accessories.

2. Online supporting for installation, if you have questions in installation.

3. Charged service:

Engineer & workers to help you installtion. 200USD/day for one person. And need to cover air-ticket fee.